

Travel safer roads with ERNI



Our Client is One of the Largest Top 4 Automakers in China

For more than 60 years, our client has established itself as a diversified maker of quality light, medium and heavy-duty commercial trucks, automobiles, buses and luxury passenger cars.

Based in China with a globally-renowned reputation, the company's strong dedication to help improve the quality of life and comfort of its consumers enables them to get around quickly and to relocate more readily with a peace of mind.

Besides delivering immense benefits through their products, they believe in making a difference to society - their goal is to manufacture cutting edge, efficient vehicles with world class safety features using sustainable hybrid and fuel technologies to reduce the impact on our environment.

Road and passenger safety have always been of utmost importance for automakers, and every electronic component and cable assembly part that goes into designing a vehicle must meet the stringent quality requirements of the automotive safety standards.

For confidentiality reasons, we are unable to disclose our client's name in this success story.

The Client's Application 1: The Battery Management System

Our client needed Board-to-Cable connectors with a side retention force of 100N for a reliable and secure mating connection between the male and female connectors to withstand strong vibrations. The connectors also have to withstand extreme temperatures ranging between -40°C to $+125^{\circ}\text{C}$ and most importantly, be UL 94V-0 approved (Standard for Safety of Flammability of Plastic Materials certificate).

Our Solution: MaxiBridge 2.54mm connectors

Designed based on VW75174 and USCAR-2 automotive specifications, the single and dual row cable ERNI MaxiBridge cable connectors can withstand temperatures from -55°C to $+150^{\circ}\text{C}$. Not only is this particularly suitable for applications with higher temperature requirements, it has also exceeded the client's requirements in specifications.

Other key features include:

- Available in different pin-counts: 2pin to 8pin in a single row, 10pin and 20pin in a dual row configuration.
- High current-carrying capacity of up to 12A on a 2.54mm pitch (suitable for use under extreme, demanding electrical conditions)
- A dual crimp interlocking system to secure the crimp contacts in the female housing connector and a double-sided housing interlocking for a reliable connection during mating.
- Designed with a high degree of vibration performance (5 Hz – 1000 Hz) according to the automotive requirements.



MaxiBridge 2.54mm



SMC 1.27mm

The Client's Application 2: The Inverter

Our client needed a Board-to-Board small pitch connector with a high retention force of approximately 30N, coupled with the ability to withstand extreme temperatures ranging between -40°C to $+125^{\circ}\text{C}$. Lastly, it must be UL 94V-0 approved.

Our Solution: SMC 1.27mm connectors

The dual row ERNI SMC connectors available in different pin-counts from 12 to 80pins allow compact board-to-board and wire-to-board connections. Its 1.27mm pitch maximizes the space on printed circuit boards in an application and is robust to withstand high temperatures from -55°C to $+150^{\circ}\text{C}$, making it suitable for use in the automotive industry.

Other key features include:

- An ultra-reliable dual beam female contact design system for reliable and secure connection to resist high shock and vibration forces for a safe application in harsh environments.
- High-speed data capabilities up to 3 Gbit/s.
- Its special locating pegs ensure connectors are placed correctly on the printed circuit boards.
- Can be both manually assembled, as well as through a fully automated pick-and-place assembly.

At ERNI, we support our clients through their entire developmental journey - from the prototype design to their finished product. Our class-leading experience and vast knowledge in the automotive industry gives us a competitive edge over other manufacturers. It is no coincidence that our clients hold ERNI in regard as an innovative leader and supplier of high-quality electronic connectors worldwide.

Please feel free to [contact us](#) if you wish to learn how ERNI can help you.